Revised Strategies to Improve Teacher Preparation

STEM Task Force Study Group on Teacher Preparation

September 4, 2007

Charge to the Study Group

To revise and refine the strategies needed implement the Statewide STEM Task Force's recommendation to "improve teacher preparation programs and encourage people with undergraduate and graduate STEM degrees to enter the teaching profession."

Study Group Chair

Bill Wilson, Deputy Executive Director for Education and Outreach, Kentucky Educational Television

Study Group Members

Cathy Gunn, Dean, College of Education, Morehead State University
Sarah Laws, Provost, Midway College
Amy Lowen, past Director of Education, Louisville Science Center
William Pierce, Professor of Pharmacology, University of Louisville
Suzanne Soled, Associate Professor and Chair of Teacher Education and School Leadership, Northern Kentucky University
Billie Travis, Curriculum Resource Teacher, Royal Spring Middle School, Scott County Schools
Neil Weber, Professor and Dean of the College of Science, Engineering and Technology, Murray State University

CPE Staff Liaison

Heidi Hiemstra, Senior Associate for Research and Analysis, Council on Postsecondary Education

STEM Task Force Teacher Preparation Study Group
Potential Strategies

Recommendation #4. Improve teacher preparation programs and encourage people with undergraduate and graduate STEM degrees to enter the teaching profession.

Potential strategies include:

1. **Encourage, support, and reward postsecondary STEM faculty for involvement in K-12 classrooms and leadership in mathematics and science teacher education.**

Objectives (to achieve the strategy)	**Accountability & Assessment (Responsible Person/Agency)**	**Timeline for Completion**	**Funding Source/ Estimated Cost**
Review and report on the current state of reward systems at KY universities for science and mathematics faculty in preparation of P-12 teachers, including specific annual performance benchmarks for key performance indicators for each academic unit administering postsecondary STEM faculty involved in K-12 classrooms.	CPE/Colleges and universities	January 2008	Direct and indirect costs
Earmark 0.5 percent of colleges and universities' annual merit raise pool for rewards for post secondary STEM faculty effectively involved in K-12 classrooms.	CPE/Colleges and universities	Planning Fall 2007, implement Spring 2009	Indirect costs and reallocation of current funding
Recognize publications in the scholarship of applied research (teaching, learning and integration) for purposes of promotion and tenure in STEM disciplines to support increased performance of students in postsecondary teacher preparation, K-12 classrooms and informal STEM learning environments.	Colleges and universities/CPE	Planning Fall 2007, implement Fall 2008	Indirect costs only
Provide compensation for postsecondary STEM faculty who are effectively involved in postsecondary teacher preparation, K-12 classrooms and informal STEM learning environments, including teaching release-time and grants for overload or summer employment.	Colleges and universities/CPE	Spring 2008	Direct and indirect costs

STEM Task Force Teacher Preparation Study Group
Potential Strategies

2. Raise the level of STEM teacher qualifications among elementary school teachers by raising elementary educator standards and credentialing requirements and requiring elementary education majors in STEM disciplines to take more coursework in their content area.

Objectives (to achieve the strategy)	**Accountability & Assessment (Responsible Person/Agency)**	**Timeline for Completion**	**Funding Source/ Estimated Cost**
Review the Education Professional Standard Board's (EPSB) upcoming report on Mathematics and Science courses taken by P-5/elementary teachers.	EPSB/CPE/ Colleges and Universities	Fall 2007	Indirect costs only
Recommend that EPSB increase the rigor and academic preparation of P-5 teacher candidates, particularly in the science and math areas.	CPE/Colleges and Universities	Fall 2007	Indirect costs only
Convene a statewide Task Force to research best practices in preparing elementary teachers for strong math and science content knowledge and skills.	EPSB	Fall 2008	Indirect and direct costs
This Task Force will prepare a report with recommendations for minimum requirements to EPSB.	Task Force	Fall 2008	Indirect costs only

STEM Task Force Teacher Preparation Study Group
Potential Strategies

3. Create more flexible alternate routes to teacher certification for STEM professionals in the private sector and remove barriers to second careers in teaching.

Objectives (to achieve the strategy)	**Accountability & Assessment (Responsible Person/Agency)**	**Timeline for Completion**	**Funding Source/ Estimated Cost**
Enhance public awareness of the available opportunities for alternative certification among STEM graduates and working professionals interested in STEM careers.	CPE/EPSB/KDE/ Colleges and universities	Begin fall 2007	Indirect and direct costs
Analyze the pool of available candidates for alternative certification in STEM areas.	EPSB	Spring 2008	Indirect costs only
Encourage the development of additional University Institutes in math and science (Option 7 alternative certification programs) to cover all major teacher markets.	EPSB/CPE	Spring 2009	Indirect and direct costs
Provide scholarships to bring in talented college graduates from across the country to teach in STEM subjects in high need areas.	CPE	Spring 2008	Indirect and direct costs

4. Require and encourage universities to provide more career-friendly programs for teacher preparation and advancement, including evening and weekend classes that are geographically or electronically accessible throughout the state.

Objectives (to achieve the strategy)	**Accountability & Assessment (Responsible Person/Agency)**	**Timeline for Completion**	**Funding Source/ Estimated Cost**
Conduct gap analysis of current and potential programs for alternative schedules, locations, and online access and develop and disseminate a report on the state of access to teacher preparation and advancement opportunities in Kentucky.	KACTE (KY Assoc of Colleges of Teacher Education)/ CPE	Fall 2007	Indirect costs only
Convene a Study Group made up of EPSB, CPE, KDE to develop recommendations for Colleges of Education, including incentives for increasing access.	CPE/EPSB/KDE	Summer 2008	Indirect and direct costs
Develop specific online courses for teacher preparation students in STEM areas utilizing STEM and education faculty and K-12 content experts in STEM disciplines.	KYVC/KET/EPSB/ KDE/Colleges and universities	Spring 2008	Indirect and direct costs
Explore new technologies (i.e. IPOD) for possible delivery of content materials on KDE's Knowledge Network, such as draft lesson plans for new teachers.	EPSB/KET/KDE (Dept. of Technology)	Spring 2008	Indirect and direct costs

5. Encourage the development of informal and service learning opportunities in STEM fields for students and faculty

Objectives (to achieve the strategy)	Accountability & Assessment (Responsible Person/Agency)	Timeline for Completion	Funding Source/Estimated Cost
Convene a study group to review possible connections between teacher preparation programs and informal learning settings such as science centers, museums, and environmental organizations, including practicum opportunities, work study and service learning.	EPSB/CPE/KDE/ KACTE (KY Assoc of Colleges of Teacher Education)	Fall 2007	Indirect costs only